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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,697	02/15/2007	**Hans Peter Ballegaard**	09663.0078USWO	2946

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EXAMINER	
DOAK, JENNIFER L	
ART UNIT	**PAPER NUMBER**
2872	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/563,697	BALLEGAARD ET AL.	
	Examiner	Art Unit	
	Jennifer L. Doak	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *15-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/6/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 15-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group, there being no allowable generic or linking claim. Applicant's election with traverse of the requirement for restriction in the reply filed on 9/25/08 is acknowledged. The traversal is on the ground(s) that Examiner did not give sufficient reason; no undue burden.

This is not found persuasive because, pursuant to the rules of Lack of Unity under the Patent Cooperation treaty (PCT), Examiner identified separate inventive concepts (Group I: optics; Group II, support mechanisms), and Applicant has merely alleged that this is insufficient reason, without supplying further evidence, citation, or persuasive argument. Moreover, sufficient showing of burden is shown in the separately identified inventive concepts, which are very different technologies.

The requirement is still deemed proper and is therefore made FINAL.

Specification

The title of the invention is not sufficiently descriptive. "The title should be brief but technically accurate and descriptive and should contain fewer than 500 characters," MPEP §606. Specifically, statements concerning the general type or nature of the entire system or its components that are common to many other similar elements or systems that are known in the art are not sufficiently descriptive to provide "informative value in indexing, classifying, searching, etc.," MPEP §606.01. Examiner recommends directing the title to what Applicant believes is the point of novelty, since it is by the novelty that "indexing, classifying, searching, etc." is generally

accomplished. Nevertheless, it should be noted that, pursuant to MPEP §606.01, "[i]f a satisfactory title is not supplied by the applicant, the examiner may, at the time of allowance, change the title by examiner's amendment."

A new title is required that is more clearly indicative of the invention to which the claims are directed.

Claim Objections

The claims objected to because of the following informalities:

Claim 1, line 5: "rotably" is misspelled;

Throughout the claims the word focusing ("focussing") is misspelled.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7, 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Allen (US 6144483).

Regarding claim 1, Allen discloses an internal drum scanning system comprising a cylinder (Fig. 1: 175) having a centre axis (i.e., the geometric center axis of the cylinder) and an inner surface (165) providing an imaging surface to be scanned by at least two laser beams (i.e., from 105, 110) at least one laser source (105, 110) for generating a first and a second laser beam;

a deflector (155), mounted rotatably relative to said cylinder around the centre axis of the cylinder, for deflecting said first and second laser beams towards said imaging surface; a first focusing lens (150) for focusing said first and second laser beams onto respective first and second positions (col. 8, lns. 37-38) on said imaging surface (Fig. 1); a first controllable optical element (180 via 185) adapted to control the direction of the second laser beam to maintain, during relative rotation between the deflector and the cylinder (col. 8, lns. 13-22), the second position fixed relative to the first position wherein the first focusing lens defines a first optical axis (col. 8, lns. 37-38) being imaged by said deflector onto a centre position on the imaging surface; that, during operation, the first controllable optical element is positioned such that its optical axis is displaced at a radial distance from said first optical axis (col. 8, lns. 37-38); and that the first controllable optical element is adapted to direct the second laser beam onto said first focusing lens at a varying incident angle causing the first focusing lens to image the second laser beam onto the second position such that, during relative rotation between the deflector and the cylinder, the second position is fixed relative to said centre position (col. 8, lns. 37-38).

Regarding claims 2 and 3, Allen further discloses that the first controllable optical element is mounted movably around the first optical axis of the first focusing lens (col. 8, lns. 13-38); that the first controllable optical element comprises a collimator lens or a second focusing lens (although the reference does not explicitly disclose that the controllable optical element is a focusing lens, only stating that it is the deflector lens, it is considered inherent that it is a focusing lens, since it is disclosed to be used for alignment adjacent to the other beam spot on the deflector surface and the scanned surface, and such alignment would not be accomplished or maintained by a lens that does not focus).

Regarding claim 4, Allen further discloses that the first controllable optical element is mounted movably around a second optical axis (col. 8, lns. 13-38); and wherein the internal drum scanning system further comprises means for adjusting the position of the first controllable optical element to cause the first controllable optical element to move around the second optical axis at a predetermined frequency (i.e., frequency is the rate of spin; col. 8, lns. 21-25).

Regarding claim 5, Allen further discloses that the second optical axis is positioned at a radial distance from the first optical axis (col. 8, lns. 13-38 at 37-38).

Regarding claim 7, Allen further discloses that the deflector comprises a first deflection area for deflecting the first laser beam and a second deflection area for deflecting the second laser beam (col. 8, lns. 13-38 at 37-38; i.e., since the beams are separated so as to be parallel ("non-intersecting," at line 27) the areas of incidence on the deflector are different, first and second, areas).

Regarding claim 11, Allen further discloses a detector arrangement for detecting a relative position of the first and second positions on the imaging surface (col. 5, lns. 61-3), and a control unit (col. 6, lns. 3-9) for controlling the controllable optical element, where the control system is adapted to receive a position signal from the detector arrangement (col. 5, ln. 61-9), and to control the adjustable element based on the received position signal (col. 5, ln. 61-9).

Regarding claims 12-14, Allen further discloses that the detector arrangement is positioned such that it receives at least a part of the first and second laser beams after the first and second laser beams have passed the deflector (col. 5, ln. 61-9 at 64); that the detector arrangement comprises a position sensitive detector disposed on the inner surface of the cylinder (lns. 63-67), the position sensitive detector being adapted to detect the position of a focal spot in

a direction along the centre axis of the cylinder (col. 6, ln. 3-5; i.e., geometric relationship); that the detector arrangement comprises a light detector disposed on the inner surface of the cylinder arranged to detect the a relative phase of the rotation of a focal spot around the centre axis of the cylinder (col. 6, ln. 3-9; i.e., geometric relationship, and clock phase shifter).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (US 6144483).

Regarding claim 6, Examiner makes the following findings of fact: Allen does not explicitly disclose that the first focusing lens is positioned relative to the deflector such that the optical path length from the first focusing lens to the imaging surface is substantially equal to the focal length of the first focusing lens. However, it is well known in the art to position sequential optical elements substantially at distances substantially equal to the focal length(s) of one or more elements so as to optimize image quality or light transmission.

Therefore, Examiner concludes that it would have been obvious to an ordinarily skilled artisan at the time of invention to place the first lens relative to the deflector at a distance substantially equal to its focal length so as to optimize image quality or light transmission.

Regarding claim 8, Examiner makes the following findings of fact: Allen (embodiment of Fig. 1, cited above) does not discloses a means for polarizing the first and a second laser beam; and means for polarization coupling the second laser beam generated by the first controllable optical element with the first laser beam resulting in a combined laser beam. Allen (embodiment of Fig. 1) and Allen (embodiment of Fig. 4) are related as internal drum scanning systems, and both inventions would have been known to an ordinarily skilled artisan at the time of invention.

The means-plus-function claim language invokes 35 USC 112, 6th paragraph, by meeting the following test: (1) “means for” or “step for” language (as seen in the claim language above); (2) said language is further modified by functional language (i.e., "for polarizing the first and a second laser beam" and "for polarization coupling the second laser beam""); (3) and the modifying language does not constitute sufficient structure, material, or acts for achieving the

specified function (i.e., such language is not included here), MPEP §2181. The reference discloses the claimed corresponding structure or equivalent thereof, *In re Morris*, 44 USPQ2d 1023 (Fed. Cir. 1989). Specifically, with respect to the "means for polarizing," the specification describes the corresponding structure no further, and the reference discloses the division of S and P polarized light (Fig 4; col. 11, lns. 46-53), which is a corresponding or equivalent structure. With respect to the "means for polarization coupling," the specification describes "coupling of the beams … according to any known polarization coupling method" (para. 66), and the reference discloses a beam combiner (446), which is a corresponding or equivalent structure.

The benefit of separating then coupling the beams is to use the S beam to synchronize the P beam rotation with the angular position of the spin deflector (col. 12, lns. 41-42). Examiner notes that the embodiments of Figs. 1 and 4 appear to include the same scanning structure, however it is unclear from the reference whether this is the case.

Examiner further finds that the prior art included each element claimed (as set forth above), although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements within a single reference. Moreover, an ordinarily skilled artisan could have combined the elements as claimed by known methods (e.g., mechanical and optical alignment), and that in combination, each element merely would have performed the same function as it did separately (i.e., scanning system and polarizing alignment), and an ordinarily skilled artisan would have recognized that the results of the combination were predictable with reasonable expectation of success.

Therefore, pursuant to *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 163 USPQ 673 (1969), and/or *Ruiz v. AB Chance Co.*, 69 USPQ2d 1686 (Fed. Cir. 2004), Examiner concludes that it would have been obvious to an ordinarily skilled artisan at the time of invention to combine scanning system of Fig. 1 with the polarization of Fig. 4, since the result would have been predictable, and benefits include synchronization of the P beam.

Regarding claims 9 and 10, Allen discloses, as set forth above, a controllable optical element is adapted to direct the first laser beam onto said first focusing lens at an incident angle causing the focusing lens to image the first laser beam onto the first position such that the first position is fixed relative to said centre position (col. 8, lns. 21-38); that the controllable optical element disposed at a radial distance from said first optical axis (col. 8, lns. 21-38); and that the controllable optical element is adapted to direct the first laser beam onto said first focusing lens at an incident angle causing the focusing lens to image the first laser beam onto the first position such that the first position is fixed relative to said centre position (col. 8, lns. 37-38). Allen further discloses at least two laser sources (Fig. 1:105, 110), one corresponds with the callable optical element (Fig. 1) adapted to direct a corresponding one of the laser beams onto said focusing lens at a corresponding incident angle causing the focusing lens to image the corresponding laser beam onto a corresponding position such that, during relative rotation between the deflector and the cylinder, the corresponding position is fixed relative to said centre position. (Fig. 1; col. 8, lns. 21-38).

Allen does not disclose three laser sources or at least two controllable optical elements, each disposed at a corresponding radial distance from said first optical axis. However, it has been held that it has been held that mere duplication of the essential working parts of a device

involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.,* 193 USPQ 8 (1977). The mere duplication of a laser source and corresponding controllable optical element would have been within the skill of one of ordinary skill in the art, and the benefits of increased laser source and corresponding controllers include increased total image scanning speed and image coloring.

Therefore, Examiner concludes that it would have been obvious to an ordinarily skilled artisan at the time of invention to merely duplicate a laser source and controller in order to increase total image scanning speed or increase color control.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer L. Doak whose telephone number is (571)272-9791. The examiner can normally be reached on Mon-Thurs: 7:30A-5:00P, Alt Fri: 7:30A-4:00P (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. L. D./
Examiner, Art Unit 2872

/Alessandro Amari/
Primary Examiner, Art Unit 2872